

We claim:

1. A polynucleotide comprising a fragment of any one of SEQ ID NOs: 3 to 7, or a fragment of a sequence that hybridizes under high stringency conditions with any one of SEQ ID Nos: 3 to 7, wherein said polynucleotide in the absence of inverted terminal repeat sequences from adeno-associated virus specifically induces expression in cardiac cells *in vivo* of a gene which is operably linked to said polynucleotide.

2. The polynucleotide according to claim 1, wherein said polynucleotide is SEQ ID NO: 3, or a sequence hybridizing under high stringency conditions with SEQ ID NO: 3.

3. The polynucleotide according to claim 1, wherein said polynucleotide is SEQ ID NO: 4, or a sequence hybridizing under high stringency conditions with SEQ ID NO: 4.

4. The polynucleotide according to claim 1, wherein said polynucleotide is SEQ ID NO: 5, or a sequence hybridizing under high stringency conditions with SEQ ID NO: 5.

5. The polynucleotide according to claim 1, wherein said polynucleotide is SEQ ID NO: 6, or a sequence hybridizing under high stringency conditions with SEQ ID NO: 6.

6. The polynucleotide according to claim 1, wherein said polynucleotide is SEQ ID NO: 7, or a sequence hybridizing under high stringency conditions with SEQ ID NO: 7.

7. An expression cassette comprising a sequence encoding a protein or an RNA of therapeutic interest operably linked to the polynucleotide according to claim 1.

8. The expression cassette according to claim 7, further comprising a polynucleotide SEQ ID NO: 9 operably linked to the polynucleotide according to claim 1.

9. The expression cassette according to claim 7, wherein the protein or RNA of therapeutic interest increases a rate of cardiac cell division, reduces or suppresses an immune response, induces angiogenesis, changes muscle contractility, reduces cardiac hypertrophy, reduces cardiac insufficiency, or reduces myocarditis.

10. The expression cassette according to claim 9, wherein the protein or RNA of therapeutic interest is a vascular endothelial growth factor, a fibroblast growth factor, an angiopoietin, or a cytokine.

11. The expression cassette according to claim 9, wherein the protein of therapeutic interest is an immunosuppressive protein.

12. The expression cassette according to claim 11, wherein the immunosuppressive protein is interleukin-10, interleukin-2, or interleukin-8.

13. The expression cassette according to claim 9, wherein the protein of therapeutic interest reduces hypoxia.

14. The expression cassette according to claim 13, wherein the protein that reduces hypoxia is nitric oxide synthetase, superoxide dismutase, or catalase.

15. A vector comprising the polynucleotide according to claim 1.

16. The vector according to claim 15, further comprising an origin of replication which is active in cardiac cells.

17. The vector according to claim 15, which is a plasmid, a cosmid, or any DNA not encapsidated by viral proteins

18. The vector according to claim 15, which is or is derived from an adenovirus, a retrovirus, a herpesvirus, or an adeno-associated virus.

19. A composition comprising a therapeutically-effective amount of the vector according to claim 15 and a pharmaceutically-acceptable carrier.

20. A method for expressing a protein or an RNA of therapeutic interest in cardiac cells *in vivo*, comprising

- preparing a vector according to claim 15, and
- introducing said vector into cardiac cells *in vivo* so that said protein or RNA of therapeutic interest is expressed.